

Meier (H. F.)

A new form of rectal
medication



A NEW FORM OF RECTAL MEDICATION.

BY H. F. MEIER.

In the endeavor to gratify a natural desire for convenience of dispensing, portability and adaptation for the purpose, various methods have been suggested during the past few years, looking toward the provision of a suitable form for the rectal administration of glycerin. As the result of many attempts, a form has finally crystallized into tangibility, which, while not entirely perfect, is still the embodiment of many excellent features. This form is that of a suppository, prepared by the simple addition or the incorporation of a special kind of soap. This soap, characterized by extreme hardness, known as stearine soap, has the property of imparting to the glycerin in which it is dissolved the requisite degree of firmness.

These suppositories, from the nature of the composition employed, offer the medicinal ingredient in as compact a form as possible, containing as high as 95 per cent. of glycerin. In this respect they offer a decided contrast to the form prepared by filling hollow cones of cocoa butter, and which, from the nature of the material, are of an uncomfortable size.

The hygroscopic nature of the glycerin requires that reasonable precautions be taken to preserve the suppositories in a dry atmosphere, in order to prevent the accumulation of moisture on their surface and consequent dilution of part of the glycerin, with possible loss of activity.

The form adopted has been the result of much study and experience; being a double-pointed cone; the closing of both sphincter muscles around it results in an upward movement, undoubtedly assisted by the impetus originally given. It has been found that this form offers the least amount of obstruction to such reflex peristalsis.

Experience has also shown that perfect solution is not indispensable to their activity, but that they are capable of provoking a laxative effect without a noticeable loss of substance. That the glycerin, however, exudes or escapes, so as to exert an effect, can be admirably shown by suspending a suppository at the surface of a test tube filled with water. This is accomplished by simply running a pin through the upper end of the suppository, the ends of the pin projecting over the tube. The glycerin can now be seen to escape, and its rapid downward flow observed. These suppositories have been used extensively, and with quite uniformly beneficial results, both in this country and in Europe.

A frequent source of perplexity with prescribers has been their apparent insolubility in water at the usual bodily temperature. While it is possible to prepare a suppository which would be entirely soluble or nearly so, success has not yet attended the manufacture on a large scale of such, with regard either to economy or safety—that is, as far as their keeping qualities are concerned. A suppository which, while possessing this apparently desirable feature of solubility, melts below the average temperature of the body, 98° F., cannot at the same time be adapted or expected to withstand the vicissitudes of climate to which it would inevitably be exposed in different sections of a large country.

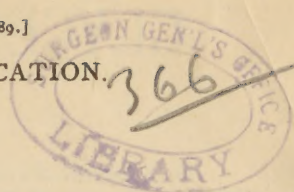
Cases have been met with in practice, in which these suppositories were not applicable; indeed, in which the introduction of any foreign substance except clysters is contraindicated. Considered from a physiological standpoint, the action of these suppositories would naturally be confined to the rectum and usually the lower part of the great intestine. Where obstruction exists in the intestines too far removed from the tracts just named, other means must necessarily be adopted.

Frequently certain febrile or inflammatory conditions of the intestinal tract would alone preclude their use. Such contraindications are self-evident to the observing physician.

While these suppositories have in many cases decided advantages over like contrivances prepared from gelatin, unfortunately their range of application is limited. This results from the chemical nature of the agent employed to solidify the glycerin.

It will be evident from these considerations that many medicinal agents which it would be desirable to administer in the form of suppositories would be incompatible with the base employed, while others not affecting the soap with resulting decomposition can be employed to better advantage in this way than when cloaked with an excipient or carrier of a fatty nature.

A promising field of research in this direction, is open to the pharmacist, which must in time bear an abundant harvest.



GLYCERIN SUPPOSITORIES.

(Aperient Suppositories.)

For a number of years glycerin has been successfully used in the form of enemata, to provoke alvine evacuations. Owing to the physical and chemical properties of this article, many difficulties have been encountered in the endeavor to present it in a suitable and convenient form which would dispense with injection apparatus. While it may be conveniently administered in rectal capsules its enclosure in gelatin is not permanent, as capsules containing it are rapidly attacked and become distorted, owing to the hygroscopic character of the glycerin and its solvent action on the gelatin, the greater part of the glycerin usually escaping. Neither does it appear possible to incorporate gelatin with the glycerin and produce a suppository having any activity, as such a composition necessarily requires a certain amount of water. This admixture of water interferes decidedly with the action of the glycerin. Whatever theories may be indulged in as to the rationale of its action, the best effects are obtained when only a minute quantity of water is present, in other words when the glycerin is nearly anhydrous.

The effect would appear to be due to some direct chemical action of the glycerin on the rectal mucous membrane, possibly a combined stimulant and mechanical effect, the latter due to abstraction of water, or rather excitation of a watery discharge. Be that as it may, it produces in some way an active reflex intestinal peristalsis. The remedy has been used in the most varied forms of intestinal and gastric troubles and is characterized by extreme promptness of action varying from a few minutes to half an hour, usually producing an evacuation when the suppository is only partially dissolved.

The conclusion arrived at, from an extensive employment, is, that their action while not infallible, is constant and free from danger. We now prepare suppositories containing 95 per cent. of glycerin in a form and size adapted for administration to both infants and adults.

SPECIAL NOTICE.—It is but natural to presuppose that these suppositories, in their entirety, should be soluble in water or in the intestinal fluids at the temperature of the body, in order to bring about the desired medicinal effect. This is not necessarily the case, however. Experience has shown that perfect solution is not indispensable to their activity, but that they are capable of provoking a laxative effect without noticeable loss of substance. That osmosis takes place, or that there is an exudation of glycerin occurring, can be readily shown by suspending a suppository at the surface of a test tube filled with water, and observing the downward flow of the specifically heavier glycerin.

It is hardly necessary to caution the observant physician that there frequently exist febrile or inflammatory conditions of the intestinal tract where the employment of suppositories, or any solid substance, is either inadmissible or contra-indicated, and where other measures should be adopted for clearance.

The form given to these suppositories, that of a double cone, is such as long experience has shown to be the most desirable and effective; they receive accordingly an upward propulsive movement due to the contraction of the external sphincter, and the direction and impetus thus given appear to be sustained up to a certain point by the internal sphincter muscle.

The size has also been arranged with especial reference to convenience of division when desirable for infantile administration, as each suppository can be readily cut into two equal parts, or still further reduced.

CAUTION.—Owing to the hygroscopic character of the glycerin, these suppositories are protected by a covering of tinfoil. The package should be kept closed and in a thoroughly dry place to preserve them from atmospheric moisture.

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